

DISPLAY DEVICE COLOR CHANNEL RECONSTRUCTION

ABSTRACT

In general, the invention relates to techniques for reconstructing color channels in a multi-channel display device. The invention may be particularly useful in reconstructing the light source spectra for the color channels of liquid crystal displays (LCD). In order to accurately model and calibrate a display device, an accurate light source spectrum estimate for each of the individual color channels is needed. In accordance with the invention, a light source spectrum can be determined for each color channel of a display based on measured emission spectra for the color channels, an inverted contrast ratio for the display, and an assumed transmission spectrum for a light valve in the display. The invention provides techniques to compensate for light leakage from adjacent color channels with regards to wavelength dependent transmissions that cause hue shifts in images reconstructed by the display device.